

Subject: Extension of Alternative Compliance Periods Under the Anti-Dumping Program:
Seasonal NOx Emissions Determination

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To: Docket A-2002-14

Background

This rule, Extension of Alternative Compliance Periods Under the Anti-Dumping Program, would extend the amount of time available to an approved refinery to comply with its anti-dumping NOx requirement. Under the original rule wherein a refiner could petition and be approved for an Alternative Anti-Dumping Compliance Period, EPA required a refiner to purchase NOx credits when, on a quarterly basis, its average NOx emissions exceeded the annual statutory NOx value. As stated in the September 8, 2000, rule, "...credits function as collateral against any NOx deficiency that the refiner creates to minimize the possibility of environmental harm in the event the refinery does not fulfill its obligation under the other requirements of the rule."

Direct Final Rule/Proposed Rule ("today's action")

EPA has determined that the current method of calculating NOx emissions deficits and benefits at 80.101(k)(3)(ii) may have the unintended effect of creating an unnecessary pattern of buying and selling of credits by an approved refiner because of the combined effects of seasonal gasoline quality and the determination of emissions in the Complex Model. EPA believes that the same environmental outcome will be achieved by the changes contained in today's action while not resulting in the unnecessary outlay of capital by the refiner at a time when the refiner is operating under an alternative compliance period specifically to reduce the impact of financial constraints.

On a quarterly basis, gasoline production during the first and fourth quarters of the calendar year is almost all, if not entirely, winter gasoline for most refiners. Winter gasoline is not only gasoline with different properties (like higher RVP) than summer gasoline, but it must also be evaluated using the winter Complex Model. For a given fuel composition (based on fuel properties used in the Complex Model), the winter Complex Model yields higher emissions than the summer Complex Model. Winter emissions determined using the Complex Model will always be higher than annual emissions determined by combining winter and summer results from the Complex

Model¹. Thus, under the current equation for calculating NOx deficit and benefit under 80.101(k)(3), even a refiner that is producing winter gasoline that would assure annual compliance (once averaged with its summer gasoline production) would in many instances have to purchase credits for the first and fourth quarters. A refiner could produce extremely clean winter gasoline in these quarters in order to not have to purchase credits under 80.101, but it is unlikely that a refiner in start-up mode would be able to produce such clean gasoline.

Conversely, the gasoline that a refiner produces in the second and third quarters (which includes relatively little winter gasoline – roughly 20-30 percent) would perform significantly better than the annual statutory NOx value. In fact, under the current 80.101(k)(3)(ii), this overcompliance in the second and third quarters (resulting in quarterly NOx benefits) would likely more than exceed the deficit created in the first and fourth quarters, allowing those credits to be sold.

Thus, as a result of the combined effects of seasonal gasoline quality and the provisions of the Complex Model, the current manner in which NOx benefit and deficit are determined might unnecessarily require approved refiners to buy and sell NOx credits each year. This would create an economic burden without any related environmental benefits. Accordingly, we believe that the NOx credit provisions of 80.101(k)(3) should reflect the fact that the NOx performance of gasoline produced during different times of the year is expected to vary relative to the annual average statutory baseline. In quarters with a greater percentage of winter gasoline production NOx performance may be less stringent than the annual average, and in quarters with little winter gasoline production NOx performance should be better than the annual average.² The quarterly NOx emissions values contained in this action reflect these seasonal differences, e.g., the second and third quarter NOx values are more stringent, and the first and fourth quarter less stringent, than the annual average.

This action would modify the equations at 80.101(k)(3) used to calculate the quarterly NOx deficit or benefit, but does not change the environmental protection aspects intended under 80.101(k). In fact, today's action may result in the continued and accelerated start-up of an approved refinery, enabling the refinery to not require the full use of its alternative averaging period and getting cleaner gasoline to the market sooner. Specifically, for the limited application of determining an approved refiner's NOx deficit or benefit in a quarter, today's action requires that the refiner's quarterly NOx emissions will now be compared to a quarterly NOx emissions

¹The annual statutory baseline value for NOx emissions is 1461 milligrams per mile (mg/mile). [See 80.91(c)(5)(iv).] The summer and winter statutory baseline values for NOx are 1340 and 1540 mg/mile, respectively. These were determined by inputting the summer and winter statutory baseline fuel parameters into the summer or winter Complex Model, respectively. [See 80.45(b).] The annual statutory NOx baseline emissions value was determined from the weighting of the summer and winter baseline emissions using a 0.396 fraction of summer and a 0.604 fraction of winter gasoline.

² While we believe that this approach is appropriate for the limited purpose of calculated NOx credit purchase obligations, as described herein, we do not believe that such an approach would be appropriate for purposes of demonstrating compliance with an annual performance requirement.

value rather than to the annual statutory baseline NOx emissions value. The net determination of NOx deficit or benefit is unaffected.

Equation Modification

The quarterly statutory NOx values were determined as follows. First, the number of summer and winter days of gasoline production was determined for each quarter. In the first quarter, January through March, there are a total of 90 days (excluding leap years). All of these days are winter days. In the second quarter, April through June, there are 91 days. Because summer gasoline must be at terminals on May 1 and at the pump on June 1, both of those months are considered summer months. Because of these deadlines, refiners generally will start to produce summer gasoline some time in April. To account for this, approximately 10 days in April were allocated as summer, leaving 20 winter days. The approximation of 10 days of summer gasoline in April will be discussed below. In the third quarter, July and August are considered summer months. Although the high ozone, or summer, season, does not end until after September 15, refiners will generally begin reducing production of summer gasoline during early September. To account for this, only approximately 10 days in September were allocated as summer days, leaving about 20 days as winter gasoline. As for April, this allocation will be discussed further below. There are 92 days in the fourth quarter, and all gasoline produced in that quarter is winter gasoline. See Attachment 1.

Part of the consideration in approximating 10 days of summer gasoline in both April and September, in addition to the reality of early production and early stoppage of production of summer gasoline in these months, respectively, was maintaining the statutory summer and winter fractions, 0.396 and 0.604, respectively. These fractions, along with seasonal statutory emissions values, determine the annual statutory emissions value, such as the Phase II NOx standard for conventional gasoline.

Using weekly average finished gasoline production rates from 1990 (see Attachment 2)³, average quarterly, seasonal production rates were determined. Thus, in the first and fourth quarters, a single average production rate was determined; in the second and third quarters, part of the data was allocated as summer, part as winter, based on a pre-estimation of the starting and stopping production dates for summer gasoline. The average seasonal volumes were determined by multiplying the number of days of seasonal gasoline by the seasonal gasoline production rate. NOx quarterly emissions were determined by multiplying the seasonal volumes of each quarter by the corresponding seasonal statutory NOx value and dividing the result by the total volume for the quarter. The number of summer and winter days in the second and third quarters were iterated until

- 1) the statutory seasonal ratios were achieved;
 - 2) the average of the quarterly NOx emissions determined from gasoline production equaled the annual statutory NOx emissions value of 1461 mg/mile;
- and

³ U.S. Department of Energy, Energy Information Administration

3) the quarterly NO_x values determined from gasoline production and solely from calendar days were about the same.

The quarterly NO_x values in the first, third and fourth quarters were identical using either method; the second quarter NO_x value determined using gasoline production was slightly more stringent than that determined using calendar days alone. To further ensure the environmental protection aspects of this action, we are using the slightly more stringent value as the second quarter comparison.